

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for encrypting and compressing multimedia data, comprising the steps of:

creating Discrete Cosine Transform (DCT) coefficients including Differential Coefficients (DC coefficients) and Amplitude Coefficients (AC coefficients) by applying input multimedia data to a DCT unit, and quantizing the DC coefficients and the AC coefficients included in the created DCT coefficients;

encrypting and compressing a quantized Differential Coefficient (DC coefficient) and a quantized Amplitude Coefficient (AC coefficient) the quantized DC coefficients and the quantized AC coefficients by entropy encoding the quantized DC coefficients and the quantized AC coefficients;

transforming encrypting the encoded compressed DC coefficients and the compressed AC coefficients depending on a certain using an encryption key at the time of entropy encoding quantized DC and AC coefficients of the quantized DCT coefficients; and

Huffman coding the compressed and encrypted DC and AC coefficients using a Huffman table and outputting the Huffman coded DC and AC coefficients.

2. (currently amended): The method according to claim 1, wherein the step of encrypting and compressing the quantized DC coefficients and the quantized AC coefficients

comprises the steps of: entropy encoding the quantized DC coefficients and the quantized AC coefficients by performing Differential Pulse Code Modulation (DPCM) of on the quantized DC coefficients and Run Length Coding (RLC) of on the quantized AC coefficients[[,]], and wherein the encrypting the compressed DC coefficients and the compressed AC coefficients comprises:

determining the encryption key of to encrypt the compressed AC coefficients and the compressed DC coefficients and a random constant r indicating a start bit of the encryption key, using variable length information including a Variable Length Code (VLC) and a Variable Length Integer (VLI)[[,]] of each of the entropy encoded DC and AC coefficients obtained through the DPCM and the RLC; and

encrypting the compressed AC coefficients and the compressed DC coefficients using the determined encryption key.

3. (currently amended): The method according to claim 2, wherein the step of encrypting the compressed AC coefficients and the compressed DC coefficients comprises the steps of:

determining whether a value of an r-th bit is “1” in the determined encryption key of the DC coefficient; and

transforming the DC coefficient by performing an exclusive logical sum operation between the VLI of the DC coefficient and 11111111 if the determined value is “1”.

4. (currently amended): The method according to claim 2, wherein the step of encrypting the compressed AC coefficients and the compressed DC coefficients comprises the steps of:

determining whether a value of an r-th bit is “1” in the determined encryption key of the AC coefficient;

right-shifting the VLI of the AC coefficient if the determined value is “1”;

determining the VLC of the AC coefficient through the right-shifted VLI using the Huffmann table; and

transforming the AC coefficient using the determined VLC and VLI.

5. (original): The method according to claim 4, wherein the encryption key includes first and second symmetric keys, and the symmetric keys are VLCs of the AC and DC coefficients, respectively.

6. (currently amended): An apparatus for encrypting and compressing multimedia data, comprising:

a DCT unit for creating DCT coefficients including AC and DC coefficients by DCT transforming input multimedia data into discrete signals;

a quantization unit for quantizing the created DCT coefficients using a quantization table; and

an entropy encryption encoding unit for encrypting quantized AC and DC coefficients by entropy encoding the quantized AC and DC coefficients and encrypting the entropy encoded AC and DC coefficients using a certain encryption key, wherein the certain encryption key is based on a Variable Length Code (VLC) and a Variable Length Integer (VLI) of the quantized entropy encoded AC and DC coefficients.

7. (previously presented): The apparatus according to claim 6, wherein the entropy encryption encoding unit comprises:

a DPCM unit for pulse modulating the quantized DC coefficient of the DCT coefficients; an RLC unit for scanning the quantized AC coefficient of the DCT coefficients in a zig-zag run manner;

an encryption unit for encrypting the DC and AC coefficients using the VLC and the VLI of each of the DC and AC coefficients obtained by the DPCM unit and the RLC unit; and

a Huffmann coding unit for Huffmann coding the encrypted DC and AC coefficients using a Huffmann table.